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METHOD OF GUARANTEEING YEAR ORDER

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[There are no amendments to this patent.]

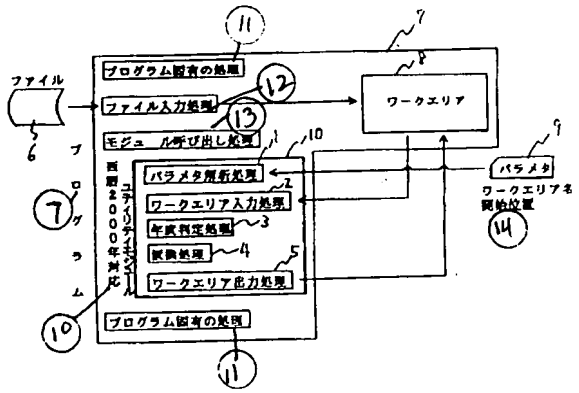
Abstract

Purpose

To guarantee the year order, even for years after 2000 AD, with the current file format, even when the year is managed by the last 2 digits of the date in digital files.

Constitution

Before the magnitude of the year is evaluated and before sort/merge processing, 2000 AD correspondence utility module (10) is activated. After that, the position in the record where the last 2 digits AD have been previously stored are specified by external parameter (9), and a code that represents a pre-defined range of dates is replaced by another code so that the year order will be maintained.



Key:
1 Parameter analysis processing
2 Work area input processing
3 Year evaluation processing
4 Replacement processing
5 Work area output processing
6 File
7 Program
8 Work area
9 Parameter
10 Year 2000 date correspondence utility module
11 Processing unique to program
12 File input processing
13 Module call-up processing
14 Work area name start position

Claim

1. Method of guaranteeing year order characterized in that, in a computer system that has a memory means and a processing section, when the last 2 digits for years in the 1900's and 2000's AD are stored in the aforementioned memory means, the processing section replaces the

code for the 10's place in the last 2 digits of the year AD with a code that maintains the year order.

Detailed explanation of the invention

[0001]

Industrial application field

This invention pertains to a method of guaranteeing year order for the year 2000 AD that guarantees ascending/descending order with evaluation of magnitude and sort/merge processing using programs for digital files in which the last 2 digits of the year AD are stored, and that can obtain correct results.

[0002]

Prior art

With conventional computer systems, the last 2 digits of years AD are stored. Note that, for example, Japanese Kokai Patent Application Nos. Sho 58[1983]-1229 and Hei 03[1991]-22117 involve this type of technology.

[0003]

Problems to be solved by the invention

The aforementioned prior art does not take into consideration years after 2000 AD, and manages the year with the last 2 digits of the year AD in a file. For this reason, after 2000 AD, when ascending/descending order is handled by processing that evaluates magnitude and by sort/merge processing using normally numbered years, their relative magnitudes are represented by formula 1.

$$1999 > 1998 > 2001 > 2000$$

[0005]

That is, regardless of the fact that the year 2000 must be evaluated to be larger than the year 1999, for evaluation, only the last 2 digits of the date are used, so since 00 is smaller than 99, year 2000 is evaluated to be smaller than year 1999. Using 4 digits for the date has been considered as a method of resolving this, but in this case, it is necessary to change the data file record length and block length, and program modifications also arise.

[0006]

The purpose of this invention is to provide a method of guaranteeing year order for handling 2000 AD that makes use of the code system and that can also handle years after 2000 AD.

[0007]

Means to solve the problems

To accomplish the aforementioned purpose, in a computer system that has a memory means and a processing section, when the last 2 digits for years in the 1900's and in the 2000's AD are stored in the aforementioned memory means, the processing section will replace the code of the 10's place in the last 2 digits of the date with a code that maintains the year order.

[0008]

Function

When there are data present that indicate years in the 1900's and 2000's AD, the data code that represents the date is replaced by another code so that the year order will be maintained. In this way, magnitude evaluation and ascending/descending order processing are guaranteed.

[0009]

Application example

Figure 1 is a block diagram of a program in one application example of this invention.

[0010]

(6) is a file where data that include only the last 2 digits of the year AD are stored. (7) is a program. (8) is a clear area. (9) is a parameter. (10) is a 2000 AD correspondence utility module.

[0011]

2000 AD correspondence utility module (10) (hereafter called module (10)) is activated when specified by program (7) or a utility and is positioned as pre-processing for processing that handles the year. Note that, in module (10), a range of the last 2 digits for which code transformation will be performed are specified in advance. Replacement involves numbers for years in the 2000's where the last 2 digits are smaller than the smallest number in the last 2 digits in years in the 1900's. For example, when data in file (6) for years AD begin with the year 1973, the last 2 digits are replaced using 00 (year 2000) for 72 (year 2072). The present application example is an example where there are data from year 1960 in file (6), such a range is specified

so that the last 2 digits will be transformed to codes 00-59. Note that, in the present application example, EBCDIC code is used as the code.

[0012]

Next, the processing sequence will be explained. First, program (7) calls module (10) at a preliminary stage that evaluates the year. After that, the following processing is performed by module (10).

[0013]

Parameter analysis processing (1): parameter (9), provided from outside, is input and the contents are analyzed, and the starting positions of the work area name and the last 2 digits of the year AD in the record are confirmed.

[0014]

Work area input processing (2): data from the work area name obtained by parameter analysis processing (1) are input.

[0015]

Year evaluation processing (3): 2 bytes from the starting position of the last 2 digits in the year AD in the record obtained by parameter analysis processing (1) are evaluated, and if within a fixed range, in the present application example, in the range from '00' to '59,' replacement processing (4) is performed. In addition to this, the next data are input.

[0016]

Replacement processing (4): the 10's place in the last 2 digits in the year AD in the record is replaced as in Table 1.

[0017]

Table 1

	置換前(1)	置換後(2)
(3) 十の位が０の場合	X' F0'	X' FA'
十の位が１の場合	X' F1'	X' FB'
十の位が２の場合	X' F2'	X' FC'
十の位が３の場合	X' F3'	X' FD'
十の位が４の場合	X' F4'	X' FE'
十の位が５の場合	X' F5'	X' FF'

Key: 1 Before replacement
2 After replacement
3 When 10's place is __

[0018]

Work area output processing (5): data that have undergone replacement processing (4) are output to work area (8).

[0019]

By replacing character codes as shown in Table 1, it is evaluated that year 2000 is greater than year 1990, and that year 2010 is greater than year 2000.

[0020]

Note that, in the present application example, the replacement processing with codes shown in Table 1 was performed for [years] greater than year 2000 with EBCDIK code, but in the case of [years] less than year 2000, they could also be replaced by empty code as in Table 2. With this method, for example, if there are data from year 1999 in file (6), up to year 2098 can be handled.

[0021]

Table 2

	置換前(1)	置換後(2)
(3) 十の位が０の場合	X' F 0'	X' B 0'
十の位が１の場合	X' F 1'	X' B 1'
十の位が２の場合	X' F 2'	X' B 2'
十の位が３の場合	X' F 3'	X' B 3'
十の位が４の場合	X' F 4'	X' B 4'
十の位が５の場合	X' F 5'	X' B 5'
十の位が６の場合	X' F 6'	X' B 6'
十の位が７の場合	X' F 7'	X' B 7'
十の位が８の場合	X' F 8'	X' B 8'
十の位が９の場合	X' F 9'	X' B 9'

Key: 1 Before replacement
2 After replacement
3 When 10's place is __

[0022]

Also, for [years] less than year 2000, they could also be replaced with code that uses X'F0' → X'B0', etc.

[0023]

Also, in the case of years in the 2000's, they could be replaced by X'F0' → X'C0', and for years in the 1900's, replaced by X'F0' → X'B0'. That is, both years in the 2000's and in the 1900's could be replaced by other codes.

[0024]

Also, it makes no difference if the character code used is JIS code or ASCII code, etc. That is, when the relative magnitudes of years are evaluated, code replacement need only be performed so that evaluation is correctly accomplished.

[0025]

Effect of the invention

By replacing code so that the relative magnitudes of years are correctly evaluated, the effect is that year order will be guaranteed without changing data file record length or block length, and further, without modifying programs.

Brief description of the figures

Figure 1 is a figure that shows program configuration.

Explanation of symbols

(1) ... parameter analysis processing, (2) ... work area input processing, (3) ... year evaluation processing, (4) ... replacement processing, (5) ... work area output processing, (6) ... file, (7) ... program, (8) ... work area, (9) ... parameter, (10) ... 2000 AD correspondence utility module.

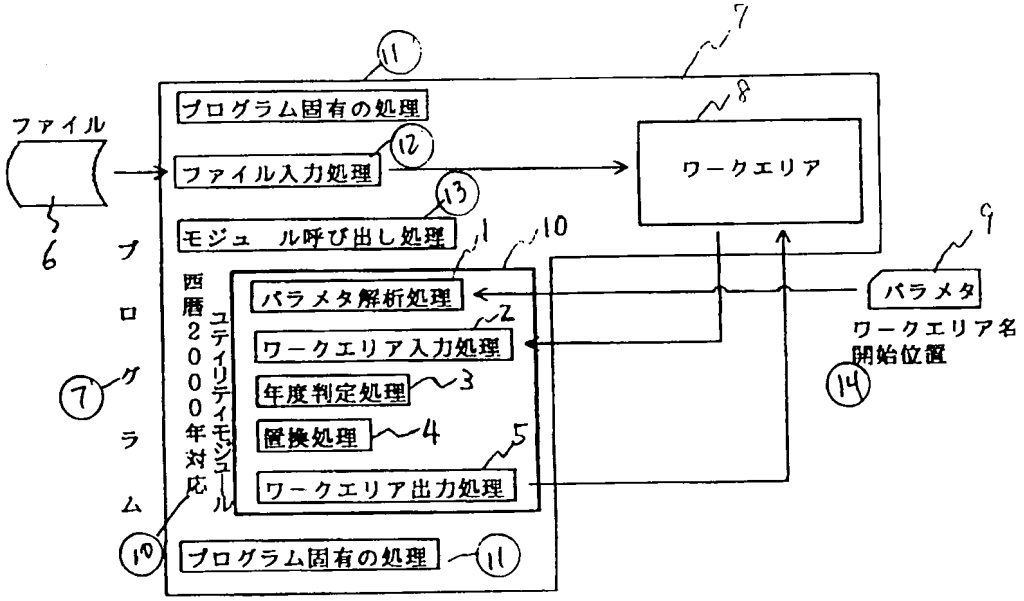


Figure 1

Key: 1 Parameter analysis processing
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3 Year evaluation processing

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